

---

**REMARKS**

This communication is a full and timely response to the non-final Office Action dated June 7, 2004. By this communication, claims 1 and 3 have been canceled without prejudice, claims 2 and 4-8 have been amended, and claim 9 has been added. Claim 2 was amended to include the subject matter of claim 3. Support for the amendment to claim 2 can be found variously throughout the specification and the claims, for example, in original claim 3. Claims 4-8 were amended to modify their dependency due to the cancellation of base claim 3. As noted above, claim 9 has been added. Support for the subject matter recited in newly added claim 9 can be found variously throughout the specification and claims, for example, in original claim 2. No new matter has been added. Claims 2 and 4-9 are pending where claims 2 and 9 are independent.

**Rejections Under 35 U.S.C. §103**

Claims 1-8 were rejected under 35 U.S.C. §103(a) as unpatentable over *Krasner*, U.S. Patent No. 6,107,960 in view of *Kaufman et al.*, U.S. Patent No. 6,240,142. Applicant respectfully traverses this rejection.

Claim 2 recites a portable terminal apparatus comprising a first receiving system for receiving a quadrature modulated signal and converting the quadrature modulated signal into an intermediate-frequency signal for output; a second receiving system comprising at least one system for receiving a BPSK modulated signal and converting the BPSK modulated signal into an intermediate-frequency signal for output; an IF stage for processing both the intermediate-frequency signal of said first receiving system and the intermediate-frequency signal of said second receiving system; and a signal processing system for processing the signal of said first receiving system that has been passed through said IF stage and the signal of said second receiving system that has been passed through said IF stage, wherein said IF stage has at least one of a variable gain amplifier for amplifying the intermediate-frequency signal of said first receiving system and the intermediate-frequency signal of said second receiving system and a quadrature demodulator for subjecting the intermediate-frequency signals that have been passed through the variable gain amplifier to quadrature demodulation for output.

The present invention is directed to a circuit that integrates a portable telephone reception system and a GPS reception system. To achieve this objective, the digital portable telephone set is provided with signal processing circuit 28 that includes a demodulating

---

circuit 29 for processing the telephone signals, and for the GPS signals the system provides a phase shifter 30 that matches the I and Q signals obtained by demodulating a BPSK (Binary Phase Shift Keying) modulation signal, an adder 31 that synthesizes both the signals after phase matching, and a correlator 32. The output of the signal processing circuit 28 is fed back into a reception IF stage 17 that is shared by both the portable telephone set and the GPS reception system.

*Krasner* discloses a method and apparatus for reducing cross interference in a combined satellite positioning system receiver and communication transceiver device. The apparatus includes a combined GPS receiver 150 that contains a GPS receiver 130 and a communication transceiver 109. The GPS receiver 130 receives GPS signals transmitted from orbiting GPS satellites and the communication transceiver 109 transmits navigational data processed by the GPS receiver 130 to a remote base station 160. The remote base station 160 determines the location of the combined receiver 150 based on the pseudorange data from the combined receiver, the time the pseudoranges were measured, and the ephemeris data received from its own GPS receiver or other sources of such data. The Office Action acknowledges that *Kaufman* fails to disclose an IF stage, a signal processing system, and a portable terminal apparatus comprising a second receiving system receiving the BPSK modulated signal and converting the BPSK modulated signal. The Office Action alleges, however, that *Kaufman* remedies these deficiencies.

*Kaufman* discloses a quadrature modulator and demodulator that provide the requisite level of performance while minimizing power consumption. In this quadrature modulator, the I and Q signals are provided to two pairs of mixers. Each mixer in a pair of mixers modulates an I or Q signal with the respective inphase or quadrature IF sinusoid. The Office Action alleges that *Kaufman* discloses at least one system for receiving a BPSK modulated signal and converting the BPSK modulated signal into an intermediate-frequency signal for output. However, *Kaufman* merely discloses that the present invention is used for quadrature demodulation of QPSK, OQPSK, QAM, and various other modulation formats such as FM. *Kaufman* fails to disclose, teach, or suggest to one of ordinary skill how a BPSK modulated signal can be converted into an intermediate-frequency signal.

In conventional systems, a digital portable telephone reception system handles a quadrature modulated signal and a GPS reception system handles a BPSK modulated system. The present invention is directed to a system integrating a portable telephone reception system and a GPS reception system, and to account for the aforementioned differences the

---

present invention incorporates circuitry that properly demodulates each signal type and generates the appropriate signal level diagrams. In contrast, it is evident that neither *Krasner* nor *Kaufman* either singly or combined contemplate the aforementioned design requirements. Accordingly, it would not have been obvious to one of ordinary skill in the art to combine these references to achieve the claimed results. In particular, there is no motivation to combine *Krasner* with *Kaufman* at least because neither reference provides for processing a BPSK modulated signal, as recited in the claim. Moreover, even if the applied references were combinable, which they are not, the Office Action has presented no evidence that proves the resulting system would achieve the claimed results. For example, substituting or incorporating the quadrature demodulator of *Kaufman* into *Krasner* would not achieve the claimed results at least because neither *Krasner* nor *Kaufman* discloses, teaches, or suggests that the received GPS signal demodulate in a manner that is consistent with the demodulation of the cellular telephone signal. This teaching would be necessary to prove that the combined references disclose, teach, or suggest an IF stage as recited in claims 1 and 9. In addition, Applicant submits that the system resulting from the combination of *Krasner* and *Kaufman* combined references would not achieve the claimed results because neither reference teaches the processing of a received telephone signal and a received GPS signal such that both the intermediate-frequency signal of the telephone signal and the intermediate-frequency of the GPS signal are processed in a shared IF stage. Thus, a *prima facie* case for obviousness has not been established.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys. V. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least these reasons, Applicants respectfully request that the rejection of claim 2 under 35 U.S.C. §103 be withdrawn and this claim be allowed.

Claims 4-8 depend from claim 2. By virtue of this dependency, Applicant submits that claims 4-8 are allowable for at least the same reasons given above with respect to claim 2. In addition, Applicant submits that claims 4-8 are further distinguished over *Krasner* and *Kaufman* by the additional elements recited therein, and particularly with respect to each

claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 4-8 under 35 U.S.C. §103 be withdrawn, and these claims be allowed.

**Newly Added Claim**

Claim 9 recites a portable terminal apparatus comprising a first receiving system for receiving a quadrature modulated signal and converting the quadrature modulated signal into an intermediate-frequency signal for output; a second receiving system comprising at least one system for receiving a BPSK modulated signal and converting the BPSK modulated signal into an intermediate-frequency signal for output; an IF stage for processing both the intermediate-frequency signal of said first receiving system and the intermediate-frequency signal of said second receiving system; and a signal processing system for processing the signal of said first receiving system that has been passed through said IF stage and the signal of said second receiving system that has been passed through said IF stage.

As discussed above, the *Krasner* and *Kaufman* either singly or combined fail to disclose, teach, or suggest a second receiving system comprising at least one system for receiving a BPSK modulated signal and converting the BPSK modulated signal into an intermediate-frequency signal for output. In particular, there is no motivation to combine *Krasner* with *Kaufman* at least because neither reference provides for processing a BPSK modulated signal, as recited in the claim. Moreover, even if the applied references were combinable, which they are not, no evidence has been provided that proves the resulting system would achieve the claimed results. For example, substituting or incorporating the quadrature demodulator of *Kaufman* into *Krasner* would not achieve the claimed results at least because neither *Krasner* nor *Kaufman* discloses, teaches, or suggests that the received GPS signal demodulate in a manner that is consistent with the demodulation of the cellular telephone signal. This teaching would be necessary to prove that the combined references disclose, teach, or suggest an IF stage as recited in claims 1 and 9. In addition, Applicant submits that the system resulting from the combination of *Krasner* and *Kaufman* combined references would not achieve the claimed results because neither reference teaches the processing of a received telephone signal and a received GPS signal such that both the intermediate-frequency signal of the telephone signal and the intermediate-frequency of the GPS signal are processed in a shared IF stage. Applicant respectfully submits that claim 9 is neither anticipated nor obvious over the prior art. Accordingly, Applicant respectfully requests that claim 9 be allowed.

---

**Conclusion**

Based on at least the foregoing amendments and remarks, Applicants submit that claims 2 and 4-9 are allowable, and this application is in condition for allowance.

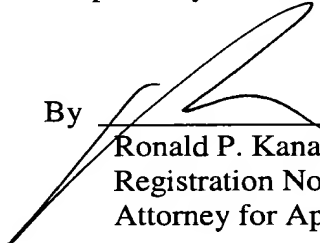
Accordingly, Applicants request favorable reexamination and reconsideration of the application. In the event the Examiner has any comments or suggestions for placing the application in even better form, Applicants request that the Examiner contact the undersigned attorney at the number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2189 from which the undersigned is authorized to draw.

Dated: August 12, 2004

Respectfully submitted,

By



Ronald P. Kananen  
Registration No.: 24,104  
Attorney for Applicant

**RADER, FISHMAN & GRAUER, PLLC**

Lion Building  
1233 20<sup>th</sup> Street, N.W., Suite 501  
Washington, D.C. 20036  
Tel: (202) 955-3750  
Fax: (202) 955-3751  
Customer No. 23353

DC164114